

4,4'-METHYLENEDIANILINE**1111**

March 1999

CAS No: 101-77-9
 RTECS No: BY5425000
 UN No: 2651
 EC No: 612-051-00-1

4,4'-Diaminodiphenylmethane
 4,4'-Methylenebisbenzenamine
 MDA
 $C_{13}H_{14}N_2 / NH_2C_6H_4CH_2C_6H_4NH_2$
 Molecular mass: 198.3

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/SYMPTOMS	PREVENTION	FIRST AID/FIRE FIGHTING
FIRE	Combustible. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames.	Powder, water spray, foam, carbon dioxide.
EXPLOSION			

EXPOSURE		AVOID ALL CONTACT!	IN ALL CASES CONSULT A DOCTOR!
Inhalation	Abdominal pain. Nausea. Vomiting. Fever and chill.	Ventilation (not if powder), local exhaust, or breathing protection.	Fresh air, rest. Refer for medical attention.
Skin	MAY BE ABSORBED! (Further see Inhalation).	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention.
Eyes		Safety spectacles, or face shield.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
Ingestion	Jaundice. (Further see Inhalation).	Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth. Refer for medical attention.

SPILLAGE DISPOSAL	PACKAGING & LABELLING
Sweep spilled substance into sealable containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Personal protection: complete protective clothing including self-contained breathing apparatus. Do NOT let this chemical enter the environment.	<p>T Symbol N Symbol R: 45-39/23/24/25-43-48/20/21/22-68-51/53 S: 53-45-61 Note: E UN Hazard Class: 6.1 UN Pack Group: III</p> <p>Do not transport with food and feedstuffs. Marine pollutant.</p>

EMERGENCY RESPONSE	SAFE STORAGE
Transport Emergency Card: TEC (R)-61GT2-III <RET > NFPA Code: H3; F1; R0	Separated from strong oxidants, food and feedstuffs. Well closed.

IMPORTANT DATA

Physical State; Appearance

COLOURLESS TO PALE YELLOW FLAKES, WITH CHARACTERISTIC ODOUR. TURNS DARK ON EXPOSURE TO AIR.

Chemical dangers

The substance decomposes on heating or on burning producing toxic fumes including aniline and nitrogen oxides. The substance is a weak base. Reacts violently with strong oxidants.

Occupational exposure limits

TLV: 0.1 ppm as TWA (skin) A3 (ACGIH 2004).

Routes of exposure

The substance can be absorbed into the body by inhalation of its aerosol, through the skin and by ingestion.

Inhalation risk

Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly.

Effects of short-term exposure

The substance may cause effects on the liver, resulting in liver impairment.

Effects of long-term or repeated exposure

Repeated or prolonged contact may cause skin sensitization. This substance is possibly carcinogenic to humans.

PHYSICAL PROPERTIES

Boiling point at 102 kPa: 398-399°C

Melting point: 91.5-92°C

Density: 0.5 g/cm³

Solubility in water: poor

Vapour pressure, Pa at 197°C: 133

Flash point: 220°C c.c.

Octanol/water partition coefficient as log Pow: 1.6

ENVIRONMENTAL DATA

The substance is harmful to aquatic organisms. It is strongly advised not to let the chemical enter into the environment because it persists in the environment.

NOTES

Depending on the degree of exposure, periodic medical examination is suggested.

Ancamine TL, Araldite hardener 972, Epicure DDM, Slumicure M, Tonox are trade names.

Card has been partly updated in October 2004. See sections Occupational Exposure Limits, EU classification, Emergency Response.

ADDITIONAL INFORMATION

LEGAL NOTICE

Neither the EC nor the IPCS nor any person acting on behalf of the EC or the IPCS is responsible